

STREAM CHANNEL ALTERATION EFFECTS ON POPULATION DYNAMICS OF NORTHERN PEARL DACE

Researchers.

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Rationale. Northern pearl dace is a tier-II threatened species in Nebraska. The distribution of northern pearl dace in Nebraska represents the southernmost extent of the species range and is isolated from the core distribution. Northern pearl dace in Nebraska reside in prairie streams of the Sandhills Ecoregion and are an important indicator species that is intolerant of degradation (decreased macrophyte coverage, incision of the stream channel sedimentation, etc.) caused by stream geomorphic changes (i.e., channelization). There is a lack of understanding regarding how stream geomorphic changes such as fragmentation and channelization affect northern pearl dace demographic parameters and population connectivity among Sandhills Ecoregion streams. Estimating the population size and survival of rare and at-risk species is challenging as capture-recapture data can be difficult to obtain. However, estimates of the effects of geomorphic

alterations on these parameters are crucial to understand how degradation and restoration of distinct habitat features could impact northern pearl dace populations. Due to the lack of knowledge on population demographics of this species in geomorphically altered streams, this study will address how varying fluvial-geomorphic conditions influence population demographics including survival, movement, and abundance of northern pearl dace in Sandhills Ecoregion headwater streams; and if genetic structure indicates lack of connectivity among northern pearl dace population within the Sandhills Ecoregion due to movement barriers such as culverts.

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